



United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,369	07/08/2002	Szu-Tsun Ma	9113-US-PA	2103
31561	7590	11/06/2003	EXAMINER	
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE 7 FLOOR-1, NO. 100 ROOSEVELT ROAD, SECTION 2 TAIPEI, 100 TAIWAN			LE, THAO P	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 11/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Thao P Le

2818

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-20 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 11-13, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al., U.S. 20020029956.

Regarding to claims 1 and 12, Allen et al. discloses the method of cleaning wafer similar to what recited in claims 1 and 12. See pages 1-13. Allen et al. discloses the method of using laser to scan/clean different types of particles on a surface of a wafer, to determine if the particles have been removed and if they have any adverse effect on a subsequently formed device by checking the patterns, size etc... (abstract, pages 1-13). Allen et al. doesn't teach or suggest to modify the operating parameters of the actual processing operation if the particles have some adverse effects. However, it would have been obvious to one having skill in the art that if the particles have some

effects, the operating parameters should be modified in order to obtain a better yield, and as high wafer-cleaning efficiency as possible.

Regarding to claims 2 and 13, Allen et al. discloses the particles have different shape, dimension, and different material composition (pages 4-6).

Regarding to claim 3, Allen et al. discloses the use of laser to determine the position/location of the particles on the wafer (abstract).

Regarding to claims 11 and 20, Allen et al. discloses the test scan using laser.

Regarding to claims 4-8, 14-17, Allen et al. discloses the method of removing particles on wafer surface whereas the particles comprises metal such as aluminum and copper, metal and metallic particles (page 13).

Regarding to claims 9 and 18, Allen et al. discloses the particles dimension falls within the range of 0.01 micro meter to 1.0 micro meter as recited in claim 18 because Allen et al's particle dimensions is between 60 nm to 800 nm which is equal to 0.06 micro meter to 0.8 micro meter.

Regarding to claims 10 and 19, Allen et al. fails to disclose the particle's dimension is between 1.0 micro meter to 5.0 micro meter. However, Allen et al. discloses the particles dimension range of 0.06 micro meter to 0.8 micro meter which is much smaller than the present invention's particles dimension. It would have been obvious to one having skill in the art that the particles dimension recited in claim 19 would have been

removed and even much easier than the particles dimension disclosed in Allen et al. because the size of present invention particles is much bigger.

4. When responding to the office action, Applicants' are advice to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao P. Le whose telephone number is 703-605-1187. The examiner can normally be reached on Monday-Thursday 7:30am-6: 30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 703-308-4910. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Thao Phuong Le

Examiner



HOAI HO
PRIMARY EXAMINER